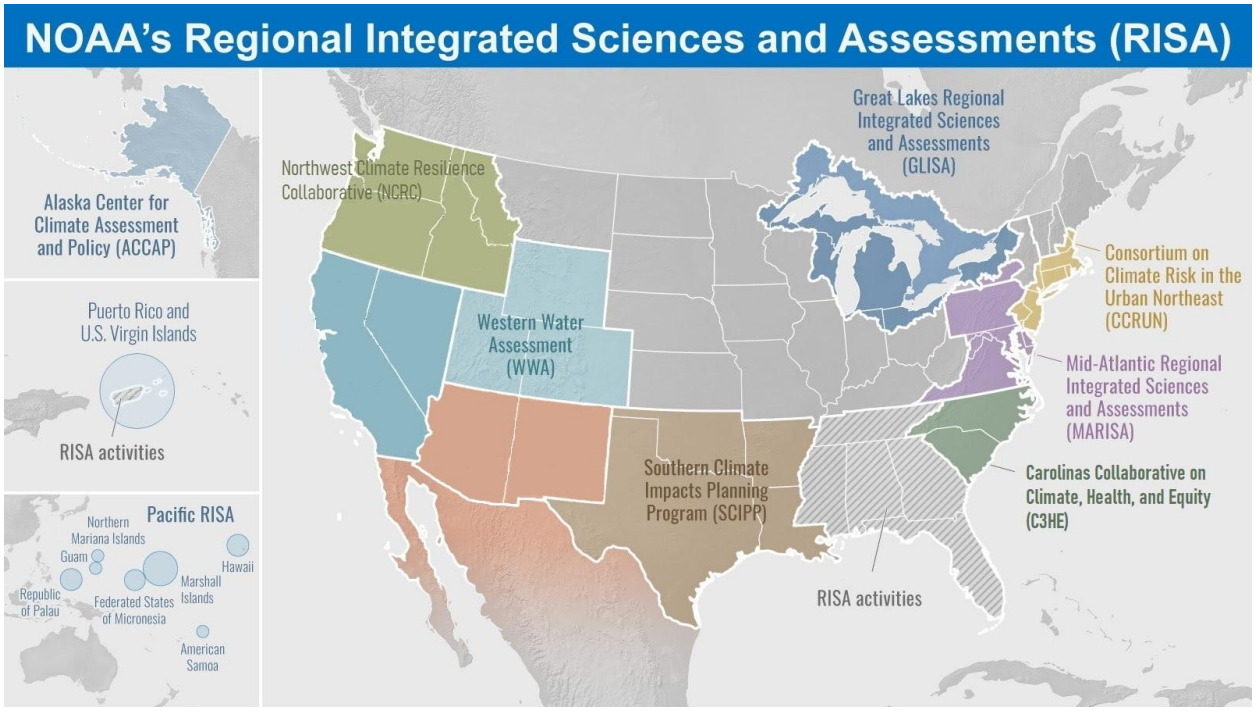
RISA
Regional Integrated Sciences and Assessments

Guide to the RISA Teams

2021-2026 Cohort



The 9 RISA teams of the 2021-2026 cohort include all regions that are labeled with a team name and acronym. RISA activities is a shorter, one-year initiative to develop new collaborative relationships and planning activities in regions without full RISA team coverage.

The NOAA Climate Program Office's Regional Integrated Sciences and Assessments (RISA) program invests in research and engagement that expands regional capacity to adapt to climate change in the U.S. RISA's regional teams build sustained relationships between decision makers and researchers that support collaborative and equitable adaptation to climate risks.

In Fiscal Year 2021, the RISA program launched 9 new 5-year RISA teams. This document is a guide to the teams, the major themes in their work plan, and the projects that will advance climate knowledge and adaptation capacity in their regions.

You can find more information at https://cpo.noaa.gov/risa.

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Alaska

Alaska Center for Climate Assessment and Policy (ACCAP)

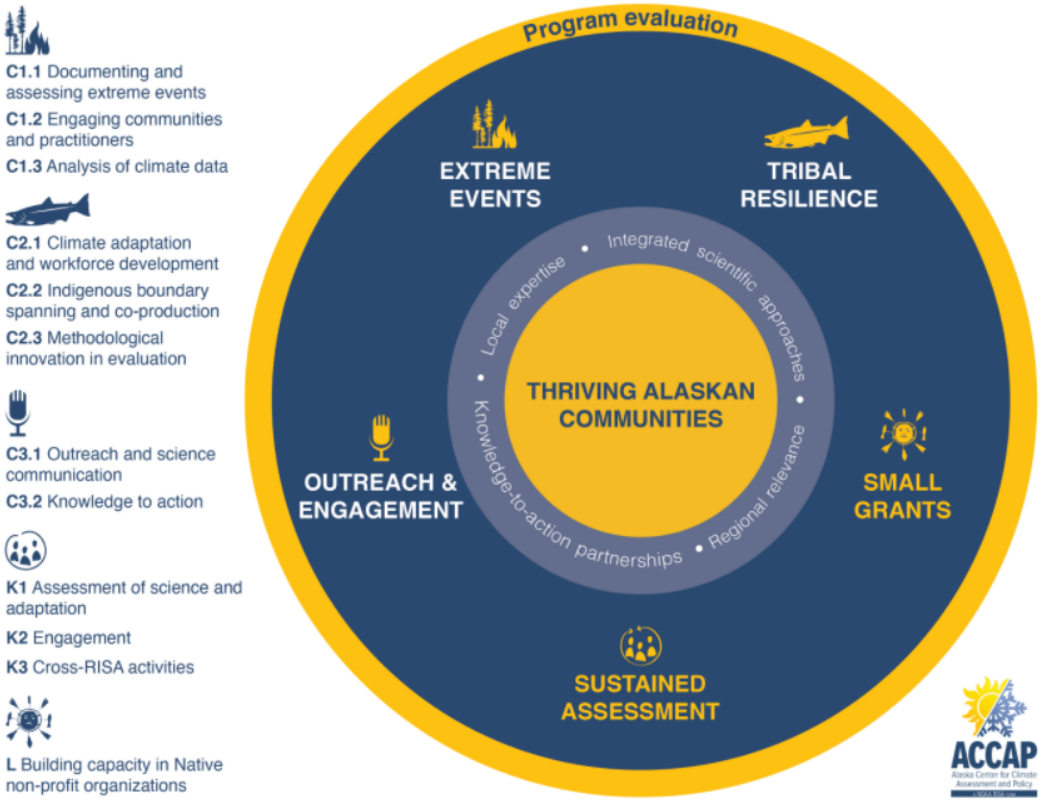


Fig 1. Overview of Proposed ACCAP Activities
Our vision of thriving Alaskan communities is supported through the three integrated activities: extreme events, tribal resilience, and outreach & engagement as well as by the sustained assessment and small-grants supplements. Central to achieving these activities are: local expertise, integrated scientific approaches, regional relevance, and knowledge to action partnerships. Our proposed program evaluation will encompass all funded activities.[48]

Title: Building Healthy and Thriving Alaskan Communities, Economies, and Ecosystems in a Changing Climate
Geography: Alaska
Institution: University of Alaska Fairbanks
Funding: $6,212,618
Core Themes:

- extreme events and impacts
- capacity building in support of Tribal resilience

Core Team:

- Sarah Trainor, University of Alaska Fairbanks and Alaska Fire Science Consortium
- Nathan Kettle, Experimental Arctic Prediction Initiative at the University of Alaska Fairbanks

- John Walsh, University of Alaska Fairbanks
- Adelheid Hermann, University of Alaska Fairbanks

https://uaf-accap.org/

Abstract: This RISA team's portfolio of interwoven research and engagement in Alaska will support the underlying vision of building healthy and thriving Alaskan communities. **Core themes include extreme events and impacts and capacity building in support of Tribal resilience.** In the **extreme events** work, the team will use an integrated scientific approach that brings together social science, climate science, and local expertise to: **a)** document socio-economic impacts of extreme climate and weather events in Alaska; **b)** engage practitioners to determine and meet information needs; and **c)** analyze historical and projected changes in extreme event occurrences to inform policy and decision-making. The work will support **Tribal resilience** by: **a)** bridging community-level climate adaptation planning and implementation with workforce and economic development; **b)** investigating and supporting boundary spanning and knowledge co-production between Alaska Native communities and climate and related researchers; **c)** innovating evaluation methodology and elevating Indigenous evaluation of climate-related knowledge co-production and climate adaptation. Hallmarks of new outreach and engagement activities in this project include assessment products that encompass societal impacts and adaptation, training for students and postdoctoral fellows, online course development, and enhanced convening activities with a focus on serving the needs of policy-makers, Alaska Native Peoples, tribes, and organizations throughout the state. This team includes a **sustained assessment specialist** and **small-grant competition**, which like the core portfolio, aims to fulfill ACCAP's vision of thriving Alaskan communities, economies, and ecosystems.

Projects:

- 1: Extreme events and impacts
    - 1.1: Documenting and assessing extreme event impacts in Alaska
    - 1.2: Engage in knowledge to action partnerships to meet extreme event information needs
        - 1.2.1: Seasonal to sub-seasonal climate prediction needs for economic vitality and food security in western Alaska
        - 1.2.2: Assessing and predicting avalanche and landslide hazards
        - 1.2.3: Partnering with wildfire managers to specify and meet climate research needs
    - 1.3: Analysis of climate data
- 2: Capacity building in support of tribal resilience
    - 2.1: Investigating the intersection of workforce development, economic development, and climate change adaptation in Alaska Native and rural communities
    - 2.2: Analysis of boundary spanning and knowledge co-production with Indigenous communities in Alaska

- 2.3: Methodological innovation in evaluation of knowledge co-production and climate adaptation capacity building
    - Case 1: Evaluation of climate impacts on traditional food security in Kake
    - Case 2: Evaluation of Community Partnership for Self-Resilience
    - Case 3: Evaluation of Tribal climate adaptation planning trainings

Carolinas

Carolinas Collaborative on Climate, Health, and Equity (C3HE)

Figure 2. Conceptual framework for our proposed plan of work.

Title: Innovating a Community-Based Resilience Model on Climate and Health Equity in the Carolinas
Geography: North Carolina (NC) and South Carolina (SC)
Institutions: NC State University, the NC State Climate Office, UNC Chapel Hill, Furman University, NC Central University, NC Sea Grant, SC State University, and the NC Museum of Life and Science
Funding: $5,391,673
Core Themes:

- Climate, Health, and Equity
- Compounding & Concurrent Climate Hazards
- Community-Level Climate Literacy

- Knowledge to Action
- Community-Owned Resilience Collaboratives

Core Team:

- Kathie Dello, North Carolina State Climate Office & North Carolina State University
- Jennifer Runkle, North Carolina State University
- Louie Rivers, North Carolina State University
- Antonia Sebastian, University of North Carolina Chapel Hill
- Geoffrey Habron, Furman University
- Miyuki Hino, University of North Carolina Chapel Hill
- Tonya Gerald-Goins, North Carolina Central University
- Jane Harrison, North Carolina Sea Grant
- Florence Anoruo, South Carolina State University
- Max Cawley, North Carolina Museum of Life and Science

https://climate.ncsu.edu/c3he/

Abstract: This RISA team will build upon years of regional work on climate science, tools and assessments to move into a new phase that **centers Justice, Equity, Diversity, and Inclusion (JEDI) principles** at the forefront of NOAA-funded climate research and to deliver climate futures to more communities than have been previously served. They will apply a bottom-up participatory action approach to develop a transferable model for end-to-end co-production of actionable and equitable climate resilience solutions in at-risk communities in the Carolinas. The team's aims include: **Aim 0.** Demonstrate our commitment to address the climate reality in a just and equitable way, while ensuring the inclusivity and diversity of all voices are represented in every aspect of our work in the Carolinas; **Aim 1.** Build and enhance local partnerships in underserved communities across the Carolinas to identify, test, and refine equitable solutions for climate resilience; **Aim 2.** Understand and predict how co-occurring and consecutive hazards interact with exposure and vulnerability to shape climate risk; **Aim 3.** Identify and connect the complex linkages between structures of power, intersecting social positions, and climate-health inequities in vulnerable communities; and **Aim 4.** Design and implement community-sciences programs to track physical and social science metrics and build community-level climate resiliency literacy.

Great Lakes

Great Lakes Integrated Sciences and Assessments (GLISA)

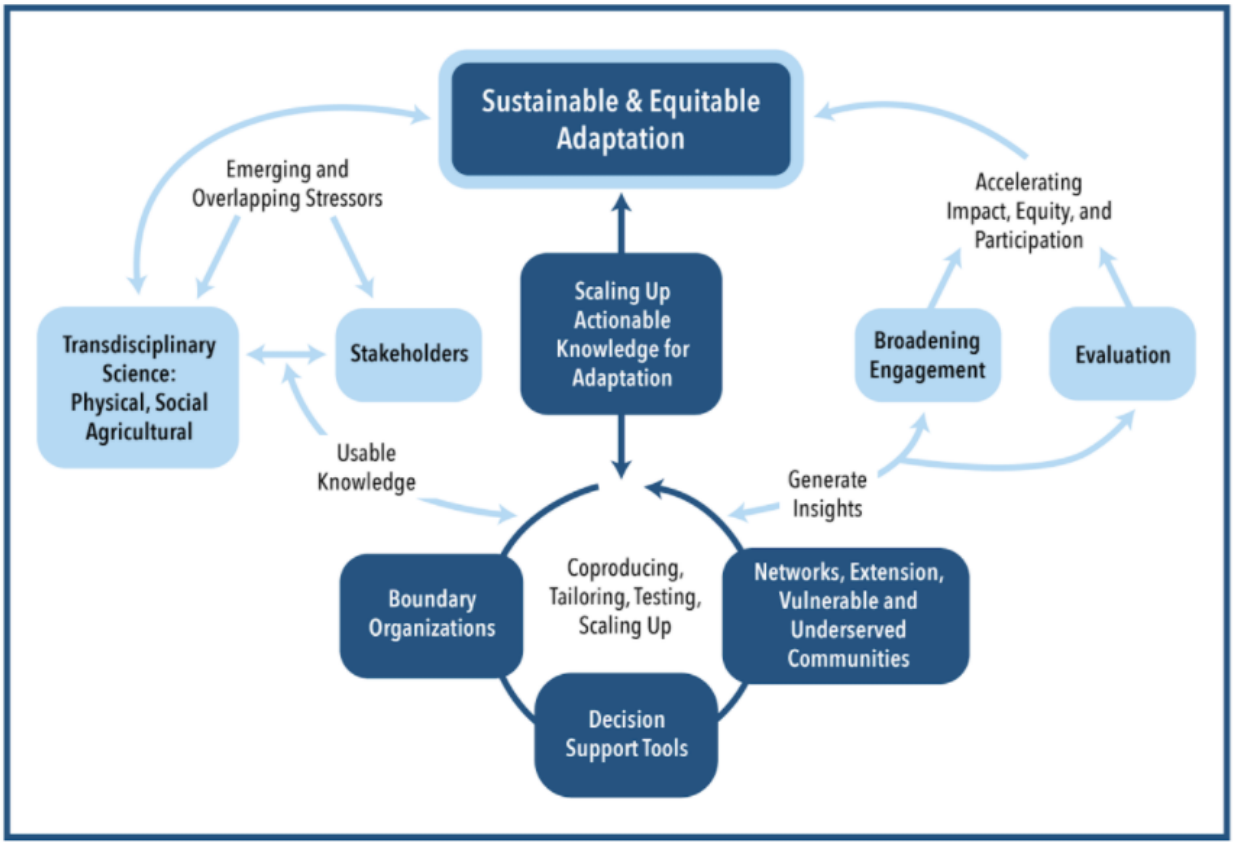


Figure 3 depicts the conceptual framework for GLISA's Phase III, across and integrating these four goals to contribute to the overall outcome of sustainable and equitable adaptation. The center lower circle (dark blue) functions as GLISA's 'engine' for accelerating boundary work (e.g., organizations, decision support tools, and people) to scale up actionable knowledge. New transdisciplinary research, interaction with stakeholders to co-produce usable knowledge, broadening participation and evaluation are new Phase III 'inputs' that will further foster GLISA's boundary work and impact (see also GLISA Phase III logic model, Figure 10).

Title: Great Lakes Integrated Sciences and Assessments (GLISA)
Geography: Great Lakes basin, including parts of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin, and Ontario
Institutions: University of Michigan, Michigan State University, College of the Menominee Nation, and University of Wisconsin-Madison
Funding: $5,399,999
Core Themes:

- Acceleration and scaling-up the impact of climate knowledge
- Informing sustainable and equitable development

Core Team:

- Maria Carmen Lemos, University of Michigan
- Jeffrey Andresen, Michigan State University

- Matthew Gammans, Michigan State University
- Thomas Kenote, College of Menominee Nation
- Michael Notaro, University of Wisconsin Madison
- Richard Rood, University of Michigan

https://glisa.umich.edu/

Abstract: The organizing theme for GLISA's next five years (Phase III) is how to **accelerate and scale-up** the impact of climate knowledge in the Great Lakes region to inform **sustainable and equitable adaptation action**. The team will realize this aspiration by fostering four main goals. **First,** GLISA will explore action-driven foundational research focusing on new and emerging issues in the Great Lakes region to better understand, assess, and co-produce actionable adaptation knowledge. This includes: **a)** modeling multiple stressors and opportunities (climatic and non-climatic) to simulate future scenarios to inform urban planning through time; **b)** exploring the role of diverse participation in shaping scenario outcomes and participants' perception of adaptive capacity, and assessing adaptive capacity longitudinally in small- and mid-sized Great Lakes cities; **c)** exploring how tensions in the relationship of tribes with water may shape plans and solutions for adaptation; **d)** expanding GLISA's Great Lakes Ensemble by focusing on extreme precipitation, evaluating new datasets, and generating new state-of-the-art climate simulations using a convection-permitting regional climate model coupled to a 3D lake model; and **e)** co-developing and demonstrating adaptive management strategies to reduce weather- and climate-related risks in agricultural production systems. **Second,** GLISA will actively build upon their ten-year experience of co-producing knowledge to scale-up their existing engagement, tools, and approaches. They will particularly focus on vulnerable urban and other traditionally under-resourced communities in the Great Lakes region through their Small Grants Program, transdisciplinary research, and new partnerships with the College of Menominee Nation (CMN) and Extension Programs in Wisconsin, Minnesota, New York, and Michigan. **Third,** GLISA will actively broaden participation in their research, engagement, and training, especially tending to issues of Justice, Equity, Diversity, and Inclusion (JEDI). And **fourth**, GLISA will design and implement an integrated and adaptive external evaluation program for the five years of GLISA's Phase III.

Projects:

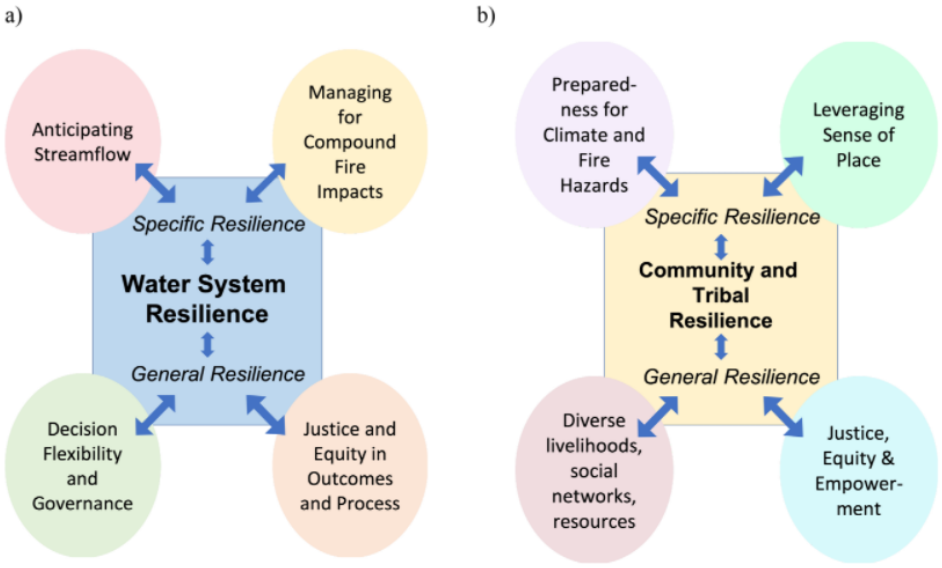
- Goal 1: GLISA will explore action-driven foundational research focusing on new and emerging issues in the GL region to better understand, assess, and co-produce actionable adaptation knowledge.
    - Project 1A: Development of an Extreme Precipitation Data Resource & Guidance
    - Project 2A: Generation and Application of the Next Generation High-Resolution Climate Projections for the Great Lakes Region
    - Project 3A: Evaluation of New Datasets & Breakthrough Identification
    - Project 4A: Simulating Multiple and Emerging Stressors for Adaptation Planning
    - Project 5A: Understanding the Role of Stakeholder Diversity on Fit, Legitimacy, and Equity of Co-Produced, Climate-Driven Knowledge

    - Project 6A: Assessing the Role of Co-produced Knowledge in Building Adaptive Capacity
    - Project 7A: Accounting for Tensions and Impacts of Tribal Relationships within Water Development and Implementation of Climate Change Adaptation Solutions & Strategies
    - Project 8A: Cropping Shifts as an Adaptation Strategy
    - Project 9A: Evaluation of Frost Protection as an Adaptation Strategy
    - Project 10A: Estimate Within-field Climate-related Production Risks for a Major Row Crop
- Goal 2: GLISA will actively build upon their ten-year experience of co-producing knowledge to scale-up their existing engagement, tools, and approaches. They will particularly focus on vulnerable urban and other traditionally under-resourced communities in the GL region through their Small Grants Program, transdisciplinary research, and new partnerships with the College of Menominee Nation (CMN) and Extension Programs in Wisconsin, Minnesota, New York, and Michigan.
    - Project 1B: Small Grants Program Fourth Generation
    - Project 2B: Pilot & Implement Cross-RISA Floodwise Communities
    - Project 3B: Pilot & Implement Cross-RISA Hazard Mitigation Planning Portal
    - Project 4B: Implement Tribal Adaptation Menu with GLISA's Scenario Planning Approach
    - Project 5B: Improving the Use of Climate Scenarios for Planning
    - Project 6B: Packaging GLISA's Scenario Planning Approach and Scenarios for Usability
    - Project 7B: Evaluation & Guidance for Existing Climate and Weather Tools
    - Project 8B: Develop Decision Support Tool for Cities Pursuing Adaptation
- Goal 3: GLISA will actively broaden participation in their research, engagement, and training, especially tending to issues of Justice, Equity, Diversity, and Inclusion (JEDI)
- Goal 4: GLISA will design and implement an integrated and adaptive external evaluation program for the five years of GLISA's Phase III.

Intermountain West

Western Water Assessment (WWA)

Figure 3: Specific and General Resilience
This conceptualizes specific and general resilience for a) water systems, and b) communities and tribes, in the context of the WWA program.



Title: Building Resilience to Compound Hazards in the Intermountain West
Geography: Colorado, Utah, Wyoming
Institutions: University of Colorado Boulder, the Cooperative Institute for Research in Environmental Sciences (CIRES), the University of Wyoming, and the University of Utah
Funding: $5,560,000
Core Themes:

- Resilient water systems
- Resilient communities

Core Team:

- Lisa Dilling, University of Colorado Boulder
- Benét Duncan, University of Colorado Boulder
- Ben Livneh, University of Colorado Boulder
- Karen Bailey, University of Colorado Boulder
- Corrie Knapp, University of Wyoming
- Court Strong, University of Utah

https://wwa.colorado.edu/

Abstract: This RISA team's vision is to build water sector and community resilience to compound hazards in the Intermountain West, with a particular focus on underserved Indigenous and small rural communities and utilities. By carefully constructing their activities, WWA will also advance resilience science from theory to practice. The team has developed an integrative set of 10 projects and other research and integration activities that draw on their 20-year history of climate adaptation research and activities in the region, and the deep interdisciplinary social and natural science expertise in their team. Their research projects fit within **two themes**: **resilient water systems and resilient communities**, and they will integrate tracking of resilience metrics to identify needs and opportunities and evaluate their success in building resilience. This award includes a **small-grant competition** to develop a network in Wyoming to build resilience of underserved communities and leverage successes to inspire other communities to engage in climate adaptation actions.

Projects:

- Theme A: Resilient Water Systems
    - Project 1: Supporting Resilient Planning Among Regional Water Providers
    - Project 2: Usability of medium-range forecasting for water system reliability
    - Project 3: Building understanding for water system resilience to changing streamflow
    - Project 4: Building resilience to compounding impacts of wildfire and snowpack declines
    - Project 5: After the fire: Informing water systems management in burned landscapes
    - Project 6: Building cross-scale understanding and collaboration to support wildfire-resilient water systems
- Theme B: Resilient Communities
    - Project 7: Assessing Current and Future Research Needs Among Vulnerable Communities in Wyoming
    - Project 8: Sense of Place and Adaptive Capacity in the Intermountain West
    - Project 9: Understanding Social Networks to Facilitate Resilience
    - Project 10: Building climate resilience in rural gateway communities

Mid-Atlantic

Mid-Atlantic Regional Integrated Sciences and Assessments (MARISA)

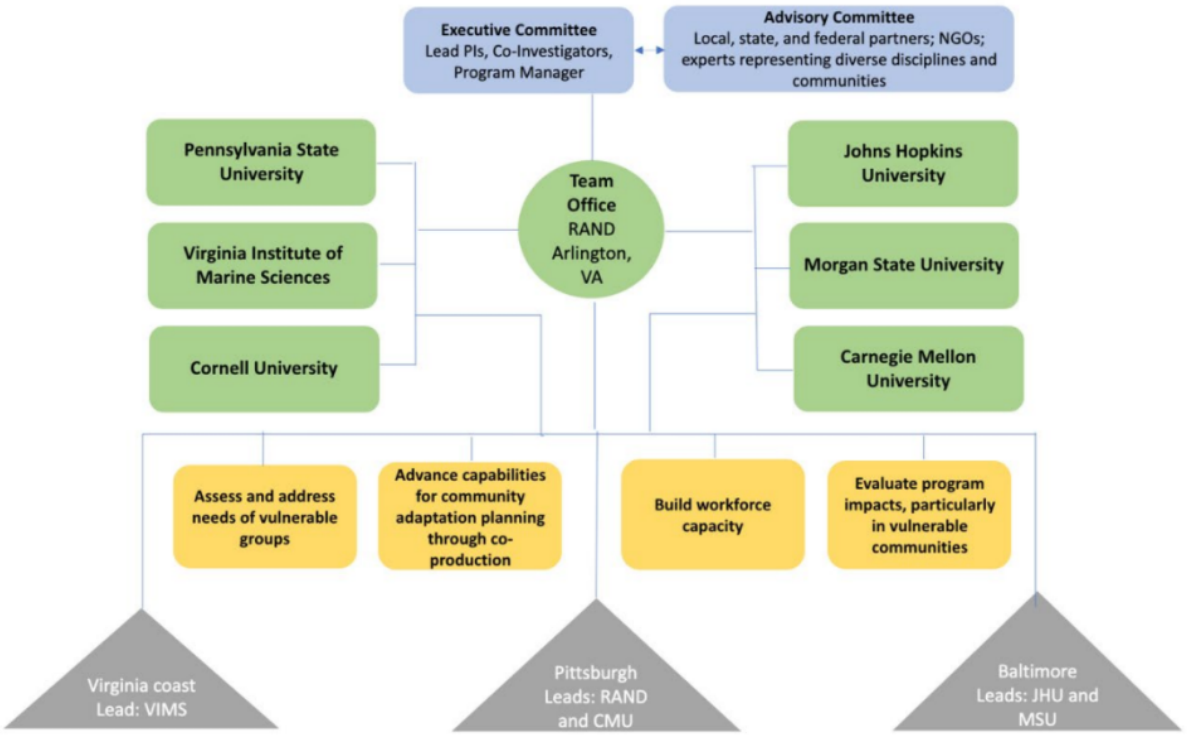


Figure 2. MARISA's Organizational and Management Structure

Title: Continuity and Expansion of Community-Based Engagement and Support

Geography: Virginia, Maryland, the District of Columbia, Pennsylvania, Delaware, and parts of West Virginia

Institutions: RAND Corporation, Pennsylvania State University, Johns Hopkins University, Cornell University, Virginia Institute of Marine Science, Morgan State University, and Carnegie Mellon University

Funding: $5,398,322

Core Themes:

- Addressing climate-sensitive needs of vulnerable communities
- Advancing capabilities for community adaptation planning through co-production of data, information, and tools
- Building workforce capacity through robust engagement of diverse students and partners
- Evaluate program impacts, particularly in socially vulnerable communities

Core Team:

- Debra Knopman, RAND Corporation
- Klaus Keller, The Pennsylvania State University
- Melissa Finucane, RAND Corporation

https://www.midatlanticrisa.org/

Abstract: This RISA team will address the **following question**: How can we best support communities in the Mid-Atlantic region in their efforts to leverage actionable climate science to make informed decisions about adapting and building resilience to a changing climate? MARISA 2.0 builds on experience gained, partnerships forged, progress made, and lessons learned over the course of MARISA's first five years. MARISA's objectives are to: **(1)** assess and address the climate-sensitive needs of vulnerable communities in the region; **(2)** advance capabilities for community adaptation planning through co-production of data, information, and tools; **(3)** build workforce capacity through robust engagement of diverse students and partners; and **(4)** evaluate program impacts, particularly in socially vulnerable communities. MARISA 2.0's support for regional climate adaptation activities will be complemented with research and outreach focused in **three geographic areas**: Baltimore, MD, Pittsburgh, PA, and the rural coastal communities of Virginia. Stormwater management remains a primary focus in the region as communities struggle to cope with extreme precipitation events. In coastal communities, tidal flooding compounded by sea-level rise (SLR) and extreme precipitation is a growing concern. In urban areas, mitigating the emerging public health threats posed by extreme heat will require a range of responses. The greatest impacts of these changing climate forces often fall disproportionately on low-income communities and communities of color. MARISA 2.0's proposed work is built on meaningful engagement with community-based organizations and local governments to improve understanding of vulnerabilities and response actions and to help relieve the disproportionate burden.

Projects:

- Objective 1: Assess and address the climate-sensitive needs of vulnerable communities in the region
    - Project 1.1: Baltimore: Equity-informed Multi-Objective Analysis and Planning for Green Infrastructure
    - Project 1.2: Pittsburgh: Integrating Modeling and Decision Support for Stormwater Managers
    - Project 1.3: Climate Adaptation in Disinvested Urban Areas: Assessing and Addressing Health and Social Impacts of Flooding
    - Project 1.4: Coastal Flooding: Primary and Secondary Impacts in Rural Communities
- Objective 2: Advance capabilities for community adaptation planning through co-production of data, information, and tools
    - Project 2.1: Hazard Mitigation Planning Portal
    - Project 2.2: Regional Data Sets and Future Integration of MARISA's Data Portals
    - Project 2.3: Seasonal Climate Summaries and Climate Data Tools

    - Project 2.4: Updating MARISA's Model Inventory and Selection Tool (MIST)
    - Project 2.5: Updating and Expanding Community Climate Outlooks
    - Project 2.6. Improving Stakeholder-Relevance of Climate Hazard Information
- Objective 3: Build workforce capacity through robust engagement of diverse students and partners
    - Project 3.1: Development of a Cross-RISA Summer School
    - Project 3.2: Other Training for Students
- Objective 4: Evaluate program impacts, particularly in socially vulnerable communities
    - Project 4.1: Evaluation of MARISA Impacts

Urban Northeast

Consortium for Climate Risk in the Urban Northeast (CCRUN)

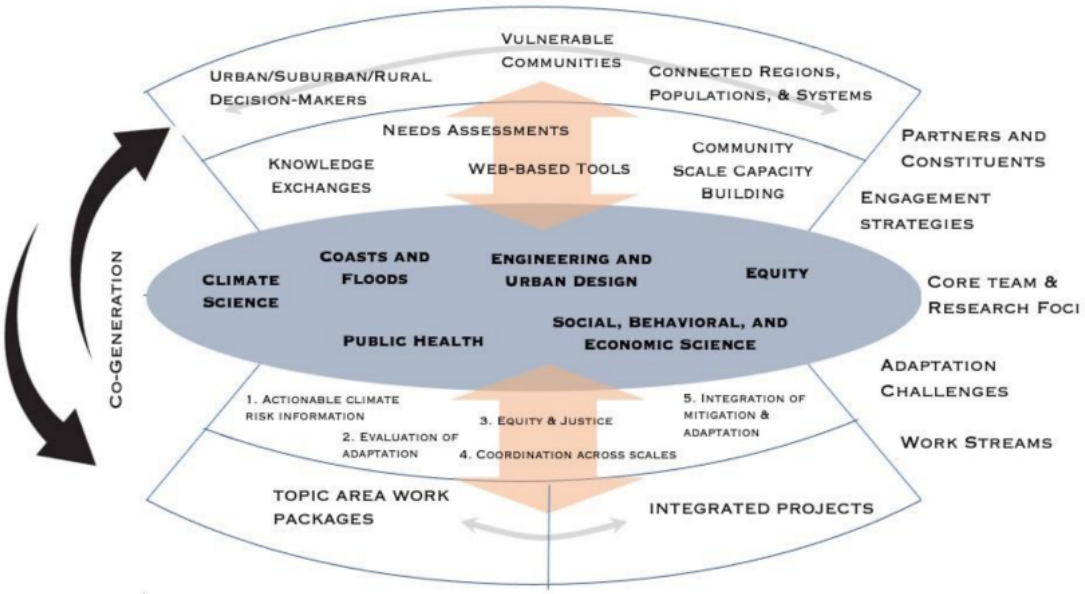


Figure 1. CCRUN Phase III Structure

Title: Supporting Regional Implementation of Integrated Climate Resilience
Geography: the urban corridor from Philadelphia to New York City to Boston, which includes New Jersey, Connecticut, Rhode Island, Massachusetts, and some counties of Pennsylvania, New York, New Hampshire, and Maine
Institutions: Columbia University, Boston University, Rutgers University, Drexel University, Stevens Institute of Technology, and City University of New York - Hunter College
Funding: $5,555,305

Core Themes:

- Climate science
- Coasts and floods
- Public health
- Engineering and urban design
- Equity
- Social, behavioral, and economic science
- Compound extreme events
- Adaptation to coastal and inland flooding
- Urban-rural linkages and regional adaptation
- Alignment of sustainability, adaptation, and emissions reductions goals in resilience planning

Core Team:

- Radley Horton, Lamont-Doherty Earth Observatory, Columbia University Earth Institute
- Patricia Fabian, Boston University
- Robin Leichenko, Rutgers University
- Malgosia Madajewicz, Columbia University
- Franco Montalto, Drexel University
- Philip Orton, Stevens Institute of Technology
- William Solecki, City University of New York-Hunter College

http://www.ccrun.org/

Abstract: This RISA team consists of natural, applied, and social scientists with deep stakeholder relationships and core competencies in the **topic areas** of climate science, coasts and floods, public health, engineering and urban design, equity, and social, behavioral, and economic science. CCRUN will conduct collaborative research in these topic areas to provide the consistency and continuity of information that underlay the region's adaptation advances in CCRUN Phases I and II. Additionally, CCRUN will manage **integrated projects** focused on: **1)** Compound extreme events; **2)** Coastal and inland flooding; **3)** Urban-rural linkages;and **4)** Alignment of sustainability, adaptation, and emissions reductions goals in resilience planning. While each project employs context-specific methodologies, several overarching approaches will guide CCRUN's engagement with decision-makers: knowledge exchange, needs assessment, community-scale capacity building, and web-based tools. The **outcomes** of CCRUN's work embody solution-based science driven by the needs of our partners and stakeholders and include: **1)** advancement of the climate science of emergent risks, **2)** enhanced understanding of the intersection of climate risk and vulnerability at new scales, and **3)** development of integrative adaptation science linking urban climate risk management and other community challenges. Emergent benefits include advancing the sustainability, scalability, and evidence-base of adaptation efforts. This award includes a **small-grant competition** targeting organizations working with socially vulnerable populations in communities that are exposed to climate risks.

Projects:

- Topic Area 1: Climate Science
    - Developing downscaled climate projections
    - Engaging stakeholders in the emerging science of climate attribution
    - Continuing applied research on climate extremes:
- Topic Area 2: Coasts and Floods
    - Provide on-demand climate risk information and research
    - Study climate and urbanization impacts on inland, coastal, and compound flooding
    - Quantify climate attribution for coastal flooding
    - Expand forecasting
- Topic Area 3: Public Health
    - Quantifying health impacts of compound events and associated vulnerable communities, with an explicit disparities lens
    - Characterizing heat exposure, vulnerability and adaptation in environmental justice communities
- Topic Area 4: Engineering and urban design
    - The impacts of climate change on urban drainage systems
    - Nature-based Strategies for Building Urban Sustainability and Resilience
- Topic Area 5: Equity
    - Co-production of vulnerability and resiliency indicators and metrics
    - Assessment of the impacts of climate decisions on underserved populations and communities
    - Build inclusive local and regional processes for equitable engagement in adaptation planning
- Topic Area 6: Social, behavioral, and economic science
    - Adoption of adaptations among different types of decision makers
    - Learning across contexts
    - Indicators of vulnerability and adaptation
    - Decision-Support Tools to Accelerate Regional, Multi-Scalar Adaptation
    - Enabling and Measuring Community Adaptation Success: A Framework for Analysis and Engagement
- CCRUN-Wide Integrated Projects
    - Integrated Project 1: Compound Extreme Events
    - Integrated Project 2: Adaptation to Coastal and Inland Flooding - A framework that deepens integration across disciplines and broadens assessed outcomes
    - Integrated Project 3: Urban-Rural Linkages and Regional Adaptation
    - Integrated Project 4: Alignment of Sustainability, Adaptation, and Emissions Reductions Goals in Resilience Planning

Pacific Islands

Pacific Regional Integrated Sciences and Assessments (Pacific RISA)

	Stakeholder Need Known &/or Specific	Stakeholder Need Unknown &/or Generic
Policy/Management Solution Known and Adequate	**Being Responsive** – Pacific RISA elicits, or helps stakeholders identify, their own goals and resource needs and then works to meet those needs with specific, requested outputs (e.g., certain types of information to fill data gaps or training)	**Being Supportive** – Pacific RISA supports the advancement of policy and management solutions and the creation of political will (e.g., through creating forums for dialog, public education, training of specific users, or by connecting stakeholder groups with each other)
Policy/Management Solution Unknown or Inadequate	**Being Generative** – Pacific RISA opens the decision space to novel ideas and approaches (e.g., by identifying new policy options, new implementation strategies, creating new data/models/analysis/insights, synthesizing documents, or producing papers, reports or videos) in ways that generate new or different conversations	**Being Critical** – Pacific RISA advances policy and management debates by being a constructively critical, credible, outside voice on existing or missing approaches (e.g., by providing commentary, evaluating implementation and outcomes)

Figure 3. The Pacific RISA Program Theory is based around our functions as a climate science boundary organization. Source: Moser[113].

Title: Building Equitable and Just Climate Solutions for Pacific Island Resilience to Compound Disasters and Extreme Events

Geography: Hawai'i, Guam, American Samoa, the Commonwealth of the Northern Marianas Islands, Republic of Palau, Republic of the Marshall Islands, and the Federated States of Micronesia

Institutions: Arizona State University Global Institute of Sustainability and Innovation, East-West Center, University of Hawai'i at Manoa, NOAA/NCEI's Center for Weather and Climate (CWC), and the NOAA Joint Institute for Marine and Atmospheric Research (JIMAR)

Funding: $7,010,696

Core Themes:

- Building resilience to compound extremes
- Recovery, nature-based solutions, and environmental security
- Transferability
- Equity and environmental justice

Core Team:

- Victoria Keener, Arizona State University & East-West Center
- Laura Brewington, Arizona State University & East-West Center

- Maxine Burkett, University of Hawai'i at Mānoa
- Abby Frazier, East-West Center
- Thomas Giambelluca, Water Resources Research Center & University of Hawai'i at Mānoa
- Zena Grecni, East-West Center
- John Marra, NOAA National Center for Environmental Information (NCEI)
- Kirsten Oleson, University of Hawai'i at Mānoa
- Christopher Shuler, University of Hawai'i at Mānoa
- Matthew Widlansky, Joint Institute for Marine and Atmospheric Research (JIMAR) & University of Hawai'i at Mānoa

https://www.pacificrisa.org/

Abstract: This RISA team will address the **overarching question**: How can we support and develop sustainable, equitable, and just climate solutions that increase Pacific Island resilience to compound disasters and extreme events? **Project objectives** are integrated and build upon Pacific RISA's progress for more than a decade, as they: **1)** conduct baseline evaluative research to identify factors that inhibit equitable climate adaptation and integrate metrics programmatically; **2)** identify new technical linkages between data, models, and projections for Hawai'i and the US-Affiliated Pacific Islands (USAPI); **3)** utilize project outputs to inform adaptation strategies and quantify the costs of extreme scenarios through the creation of an integrated exposure and risk mapping tool; and **4)** coordinate peer-to-peer exchanges across sectors, islands, and regions to enhance the scalability and transferability of project outputs. Underpinning all projects are commitments to environmental and climate justice, transparency, and the inclusion of communities that are vulnerable as a result of social and physical conditions. Tracking these objectives will be the focus of ongoing and iterative **program evaluation**. A dedicated Program Manager will integrate the efforts of staff and PIs, and liaise with partners and other regional climate programs. The **Sustained Assessment Specialist** position will support the U.S. National Climate Assessment (NCA) and, beginning with the networks involved in recent Pacific Islands Regional Climate Assessment (PIRCA) reports, engage additional groups and identify specific needs for in-depth regional assessments.

Projects:

- 1: Describing Compound Events in Hawai'i and the USAPI and Implications for Hazard Prediction, Impact Assessment, and Adaptation Planning
- 2: Enhancing Pacific Ecological Security through Research, Outreach, and Exchange
- 3: Tracking and Communicating Sea Level Conditions for Coastal Disturbances in Hawai'i and the USAPI
- 4: Peer-to-peer Exchanges on Resilience Planning for Compound and Correlated Climate Hazards and Extreme Events
- 5: Past and Future Changes in Extreme Rainfall and Associated Weather Patterns in Hawai'i
- 6: Natural Capital-informed Decision Making to Guide Climate Adaptation

- 7: Integrating Physical Drivers and Social Vulnerabilities to Assess Compounded Climate Exposure to Extreme, Climate-driven Events
- 8: Internal and External Program Evaluation

Pacific Northwest

The Northwest Climate Resilience Collaborative (NCRC)

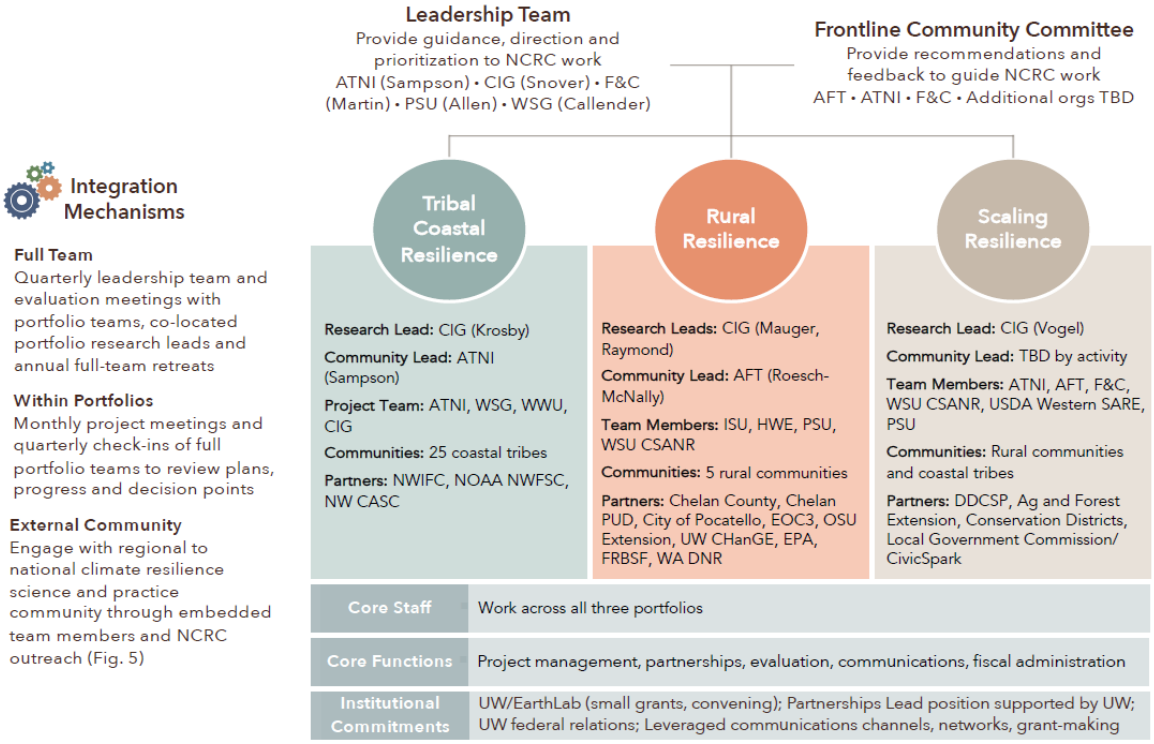


Figure 4. Organizational structure and integration mechanisms for the Northwest Climate Resilience Collaborative.

Title: Centering Frontline Communities in Climate Adaptation Science, Assessments, and Solutions
Geography: Washington, Oregon, Idaho, and parts of Montana
Institutions: University of Washington, Portland State University, Washington Sea Grant, Front and Centered, American Farmland Trust, and the Affiliated Tribes of Northwest Indians
Funding: $5,559,963

Core Themes:

- Significant advances in the theory and practice of advancing climate resilience in frontline communities
- Evidence and models for effectively elevating community-driven approaches to climate resilience
- Centering climate justice and frontline communities within the scientific enterprise
- Enhanced diversity and inclusion in regional climate sciences and services

Core Team:

- Amy Snover, Climate Impacts Group & University of Washington
- Jennifer Allen, Portland State University
- Russell Callender, Washington Sea Grant & University of Washington
- Aurora Martin, Front and Centered
- Don Sampson, Affiliated Tribes of Northwest Indians
- Meade Krosby, University of Washington
- Guillaume Mauger, University of Washington
- Crystal Raymond, University of Washington
- Jason Vogel, Climate Impacts Group & University of Washington
- Patricia Hernandez, Headwaters Economics
- Katrina Running, Idaho State University
- Chad Kruger, Washington State University
- Marco Hatch, Western Washington University

https://cig.uw.edu/

Abstract: This RISA team will **assist communities on the frontlines of climate change** in pursuing their own resilience objectives, while ensuring that local-scale and place-based innovations are scaled out and up to support broader resilience in the Northwest, across the RISA network and in state and federal climate resilience efforts. Frontline communities are centered in this team: they participate on the Leadership Team, help shape and implement the research agenda and connect NCRC efforts with community-based resilience efforts across the nation. The NCRC team brings unmatched experience and proven success in co-developing applied research in partnership with public and private entities, and facilitating the use of science in complex climate adaptation and resilience challenges. NCRC's work **will lead to: (1)** significant advances in the theory and practice of advancing climate resilience in frontline communities; **(2)** evidence and models for effectively elevating community-driven approaches to climate resilience; **(3)** centering climate justice and frontline communities within the scientific enterprise; and **(4)** enhanced diversity and inclusion in regional climate sciences and services. This award includes a **small-grant competition**, which will support frontline community resilience initiatives through a participatory grant process, establish representative communities of practice, and scale local solutions up to decision-makers and out for regional learning.

Projects:

- Tribal Coastal Resilience Project 1: Assess the Climate Adaptation Needs of Tribal Coastal Communities
- Tribal Coastal Resilience Project 2: Conduct “Deep Dives” into Priority Adaptation Opportunities and Barriers
- Rural Resilience Project 1: Advancing Resilience in Under-Resourced Communities
- Rural Resilience Project 2: Improve the Climate Resilience of Farmworkers in the
- Specialty Fruit and Vegetable Crop Industry
- Scaling Resilience Project 1: Scaling Out - Building Knowledge-to-Action Networks
- Scaling Resilience Project 2: Scaling Up - Policy to Support Resilience
- Scaling Resilience Project 3: Scaling Deep - Staffing Communities

South Central

Southern Climate Impacts Planning Program (SCIPP)

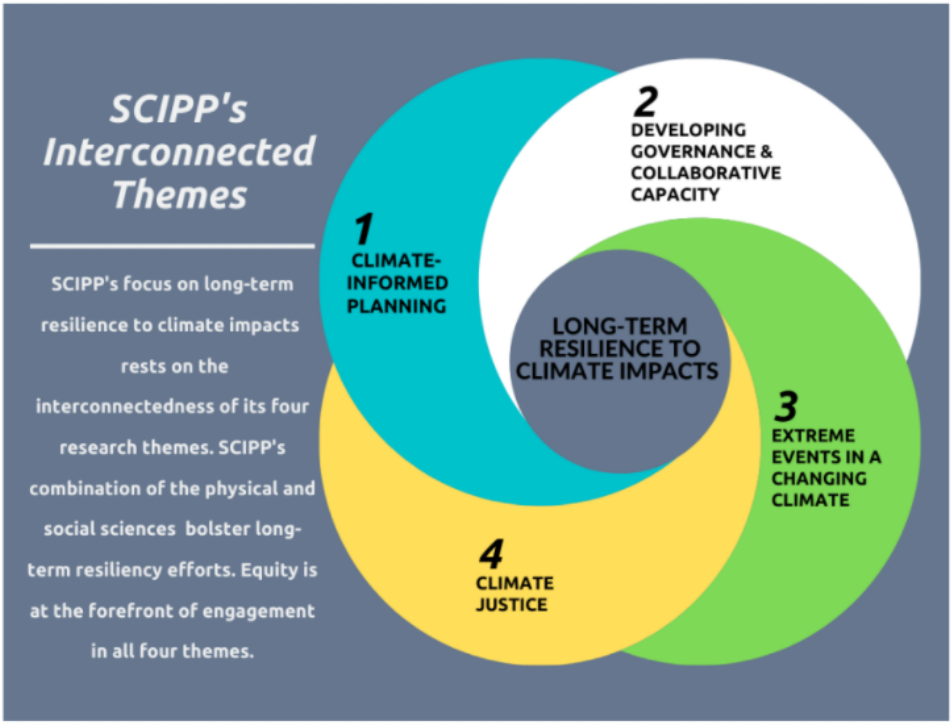


Figure 3. Interconnectivity of research themes in SCIPP Phase IV.

Title: Planning for Long Term Change in a Short Term World
Geography: Oklahoma, Louisiana, Arkansas, and Texas
Institutions: University of Oklahoma, Louisiana State University, Texas A&M University, and Texas Sea Grant
Funding: $5,400,000

Core Themes:

- Climate-informed planning
- Developing governance and collaborative capacity
- Extreme events in a changing climate
- Climate justice

Core Team:

- Rachel Riley, University of Oklahoma
- Barry Keim, Louisiana State University
- Mark Shafer, University of Oklahoma

http://www.southernclimate.org/

Abstract: This RISA team will examine communities through multiple lenses: **climate-informed planning, developing governance and collaborative capacity, extreme events in a changing climate, and climate justice**. Together, these are designed to help them become more resilient. Learning how to incorporate climate information effectively into long-term plans opens opportunities for mitigating climate impacts. Recognizing the financial and policy levers available to communities reveals how disasters can become sources of future resilience. Understanding how climate change is and may affect the frequency and intensity of events equips communities with foresight and preparedness. Climate justice assures that all members of communities have a voice and are represented in policies and activities taken to lessen the impacts of future events. These research themes are supported by a core office that coordinates individual research projects, collaborates with stakeholders, synthesizes information for distribution through networks across the region, and assesses progress toward reducing climate risks and impacts. The **project team includes expertise** in climatology, meteorology, climate adaptation, political science, public administration, geography, engineering, sustainability, and environmental justice. The core office is advised by regional stakeholders and national experts participating in an advisory committee. The core office also connects closely with other **regional climate services partners**, including the USGS South Central Climate Adaptation Science Center, USDA Southern Plains Climate Hub, NOAA Southern Regional Climate Center, and State Climate Offices.

Projects:

- Theme 1: Climate-informed planning
    - Project 1A: Building Capacity for Hazard Mitigation Planning in Under-Resourced Communities
    - Project 1B: Regional Expansion and Evaluation of the Simple Planning Tool for Climate Hazards
    - Project 1C: Climate-Informed Planning Support to Small- and Medium-Size Water Utilities Along the Central Gulf Coast
    - Project 1D: Incorporating Climate-Informed Planning into Species Best Practices
    - Project 1E: Additional Engagement Involving this Theme

- Theme 2: Developing governance and collaborative capacity
    - Project 2A: Identify Potential Fiscal, Economic, and Financial Levers
    - Project 2B: Facilitate Stakeholder Engagement to Identify Preferences
    - Project 2C: Communicate Community Preferences and Willingness to Pay
- Theme 3: Extreme events in a changing climate
    - Project 3A: Reduction in Freezing Temperatures and Tropicalization of Temperate Climates
    - Project 3B: Assessing and Promoting Awareness of Heat Stress through Wet Bulb Globe Temperature
    - Project 3C: Quantifying Extreme Rainfall using the Storm Precipitation Analysis System
    - Project 3D: Sea-Level Rise Engagement Along the U.S. Gulf Coast
    - Project 3E: Forced Retreat of Coastal Populations
- Theme 4: Climate justice
    - Project 4A: Flood Risk and Community Resilience
    - Project 4B: Heat Stress and Vulnerability
    - Project 4C: Additional Engagement Involving this Theme